

DATE: October 12, 2004

TO: Docket Office, California Energy Commission

FROM: David Viola, representing the Plumbing Manufacturers Institute

RE: Proposed Commercial Pre-rinse Spray Valve Standard
Docket No. 04-AAER-1

The Plumbing Manufacturers Institute (PMI) supports the CECs efforts to establish an efficiency standard for commercial pre-rinse spray valves and believes it will result in significant water and energy savings. PMI members are in agreement with the proposed maximum consumption limit of 1.6 gallons per minute. However, PMI is concerned about the subjectivity, and lack of repeatability and reproducibility of the proposed test method used to evaluate cleanability performance for these devices.

As a matter of introduction, PMI is the national trade association of plumbing product manufacturers. Its member companies are the innovators and producers of many water and energy conserving products that are on the market today, as well as the producers of the vast majority of pre-rinse spray valves available in the U.S.

Key Concerns with Cleanability Performance Test Method

The proposed Efficiency Standard requires the maximum water consumption and cleanability performance of pre-rinse spray valves to be determined by ASTM F2324-2003 *Standard Test Method for Prerinse Spray Valves*. PMI is concerned about the utilization of ASTM F2324 as the basis to evaluate the cleaning as it contains numerous variables that make it impossible to generate reliable results within a laboratory or reproducible results by multiple laboratories. Having a mandatory repeatable and reproducible test method is critical in assuring that reliable information is available to California consumers.

The following is a summary of the key areas of concern:

- Tomato paste/sauce:
 - The most important part of the cleanability test is the test media. In this case, it is tomato sauce made from tomato paste. The standard only requires that the paste be pure with a moisture content of $70 \pm 2.5\%$. It does not specify a type of paste (Note 2 suggests two types of generic brands). This is a big concern since substantial variation exist between each brand of paste (generic or not) in consistency, particle size and moisture content. To compound the problem further, paste consistency, particle size and moisture content varies from container to container of the same tomato paste. We also understand that the

- specific formulations (ingredients) of tomato paste are frequently varied by the manufacturers based on seasonal changes in the types of tomatoes available.
- The standard doesn't specify room conditioning requirements for the cleanability test. Although the tomato paste (before mixing into a sauce) and the plates are required to be stabilized at room temperature, there are no requirements for controlling humidity during the mixing and drying of the tomato paste and cleaning of the plates. Humidity impacts sauce adhesion and removal time.
 - Test Plate - The standard requires white glazed plates. It doesn't specify the shade of white or the surface finish characteristics. The color is important because a subjective visual inspection is required to determine cleanliness and a consistent color contrast between the tomato paste and plate is necessary. The quality of the glazed surface (i.e. glaze thickness, proper glaze fusion, glossy or matte finish, etc) plays a significant role in the adhesion of paste and the time it takes to remove it.
 - Dish racks – Dissimilar plate types sit differently in the drying and cleaning racks. This can cause plates to sit at different angles, which can alter test results.
 - Testing apparatus – A large potential for huge human error is introduced because the test apparatus lacks a means to hold the spray nozzle at the same distance and angle during the test. Additionally, the test method fails to specify the speed of the back and forth motion of the spray nozzle during the plate cleaning process. The test method relies on the lab technician's ability to consistently hold the spray nozzle at the specified distance and angle, while moving it in a back and forth action at consistent speeds. Without a means to ensure that the spray valve is positioned at precisely the same location and moved at consistent speeds for each test, it is impossible to obtain reliable results from one technician to another and from one lab to another. The following picture shows lab technicians conducting the Cleanability Test.



- Visual verification – The standard fails to provide measures to assist the technician in consistently measuring cleanliness. The standard only states that the test plates are to be sprayed until all the tomato sauce has been removed. Compliance is determined by visual verification and subject to interpretation and human error. Variables such as light conditions, plate color, technician’s height and eyesight can influence the outcome of the test.

PMI Recommendations

Delete Cleanability Test - The cleanability test of ASTM F2324 can not be relied upon to assess pre-rinse spray valves and produce consistent reliable information for consumers as it is not repeatable within a test lab or reproducible from one lab to another. As such, PMI recommends that the CEC not include a cleanability test until a reliable test method can be developed. It should be noted that PMI members have also shared their concerns with the Food Service Technology Center and have agreed to work with them to resolve the problems with the standard.

PMI recommends that the reference to ASTM F2324 be deleted and replaced with a reference to ASME A112.18.1. This standard is already referenced in the Appliance Efficiency Standard and is already being used to determine the water consumption of faucets and showerheads. The Flow Capacity Test of ASME A112.18.1 allows the use of a flow meter in addition to the time/volume method used in ASTM F2324.

Clarify Pre-rinse Spray Valve Definition - PMI also recommends that the definition of “Commercial pre-rinse spray valve” be clarified to ensure that the pre-rinse spray valve standard only applies to those products installed and used primarily for pre-rinsing dishes and cookware prior to being placed in commercial dishwashing machines. The clarification is necessary to ensure that similar valves installed in commercial kitchens that are primarily used in other applications, such as pot and kettle filling and kitchen wash down, are not subject to the 1.6 gpm flow restrictions. PMI’s recommended clarification of the Commercial Pre-rinse Spray Valve definition is as follows:

A hand-held device ~~designed that is installed in conjunction with commercial dishwashing and ware washing equipment and used primarily to spray water on dishes, flatware, and other food service items for the purpose of removing food residue prior to their cleaning the placement of such items in a commercial automatic dishwasher.~~

Conclusion

In closing, PMI believes that the proposed standard for pre-rinse spray valves without the flawed ASTM standard will provide a substantial water and energy savings. When the flaws have been rectified, it can be referenced at a later date. We urge the CEC to reflect this approach in authorizing the pre-rinse spray valve standard.